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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,985	06/15/2006	Takamitu Mikuni	4670-0128PUS1	8826

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EXAMINER
VO, HAI

ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
09/11/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,985	MIKUNI ET AL.	
	Examiner	Art Unit	
	Hai Vo	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *9-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-8 in the reply filed on 07/25/2008 is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 2004/0241417) in view of Su et al (US 6,136,903). Fischer teaches a foam thermal interface material comprising a substrate and a thermally conductive pressure sensitive adhesive composition formed on at least one surface of the substrate (abstract, paragraph 62). The thermally conductive pressure sensitive adhesive (PSA) composition comprising an acrylic adhesive and 50 to 80 wt% thermally conductive fillers including aluminum hydroxide (paragraph 47, table 1). The thermally conductive PSA composition is foamed (paragraphs 52 and 53). The PSA composition comprises an acrylic ester copolymer obtained by polymerizing 95 parts 2-ethyl hexyl acrylate and 5 parts acrylic acid (paragraphs 78 and 144). Fischer does not specifically disclose the presence of 100 parts by weight of copolymer (A1). Su, however, teaches PSA composition comprising a blend of two emulsion acrylic copolymers wherein the copolymer is prepared by sequential polymerization (abstract). Addition of a

second emulsion acrylic copolymer exhibit improved adhesion to substrate and improved adhesive performance (column 3, lines 5-25). The second emulsion acrylic copolymer has all the ingredients required by the claims (column 4, lines 35-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add a second acrylic polymer or a non-repulpable copolymer into the PSA composition of Fischer motivated by the desire to increase adhesion to substrate and improve adhesive performance of the PSA composition.

Fischer does not specifically disclose the foaming ratio of the PSA composition. However, it appears that Fischer uses the same foaming agent with the same amount as Applicants (see Fischer, claim 21, paragraph 55), therefore, it is not seen that the foaming ratio would be outside the claimed range.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 2004/0241417) in view of Su et al (US 6,136,903) as applied to claim 1 above, further in view of JP 2002-128931. Fischer does not specifically disclose the foaming ratio of the PSA composition. JP'931, however, teaches a thermally conductive sheet comprising an acrylic foam material with an expansion ratio ranging from 1.1 to 5 times (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use an acrylic foam material having an expansion ratio ranging from 1.1 to 5 motivated

by the desire to balance the flexibility and the thermal conductivity of the thermally conducting foam interface material.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 2004/0241417) in view of Su et al (US 6,136,903) as applied to claim 1 above, further in view of Yano et al (US 2003/0134130). Fischer discloses the PSA composition containing hydrophobic silica with an amount sufficient to obtain the article with the desired adhesive property. Since the concentration is recognized as a result-effective variable, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical or provides unexpected results. Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the hydrophobic silica having an amount in the range instantly claimed motivated by the desire to provide the article with the desired adhesive property. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

Fischer does not specifically disclose the particle size of Silica as well as a hydrophobicity ratio of 50% or less. Yano, however, teaches a silica with a hydrophobic ratio of 50% and a particle size of 5 to 50 nm having been widely used with a matrix resin to provide a resin composition with added strength and high transparency (abstract, paragraphs 40 and 43). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was

made to use the hydrophobic silica with a hydrophobic ratio of 50% and a particle size in the range as taught by Yano motivated by the desire to provide the PSA composition with added strength and high transparency.

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al (US 2004/0241417) in view of Su et al (US 6,136,903) as applied to claim 1 above, further in view of Miller et al (US 7,358,295). Fischer does not teach an acrylic composition comprising an aliphatic amide compound having a melting point of 120°C to 200°C and a molecular weight of less than 1000. Miller, however, teaches an acrylic composition comprising a lubricant that includes stearic amide which reads on the claimed aliphatic amide compound (column 16, lines 55-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add stearic amide into the acrylic composition motivated by the desire to impart good antiblocking properties, good moldability and good mold release.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Primary Examiner, Art Unit 1794